# PROG5

```sql
CREATE TABLE DEPARTMENT
(DNO VARCHAR (20) PRIMARY KEY,
DNAME VARCHAR(20),
MGRSTARTDATE DATE);

ALTER TABLE DEPARTMENT
ADD MGRSSN VARCHAR(20);


ALTER TABLE DEPARTMENT
ADD CONSTRAINT fk_mgrssn
FOREIGN KEY (MGRSSN)
REFERENCES EMPLOYEE(SSN);


CREATE TABLE EMPLOYEE
(SSN VARCHAR (20) PRIMARY KEY,
FNAME VARCHAR(20),
LNAME VARCHAR(20),
ADDRESS VARCHAR (20),
SEX CHAR (1),
SALARY INTEGER,
SUPERSSN VARCHAR(20),
DNO VARCHAR(20),
FOREIGN KEY (SUPERSSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE,
FOREIGN KEY (DNO) REFERENCES DEPARTMENT(DNO)ON DELETE CASCADE);



DROP TABLE EMPLOYEE;

CREATE TABLE DLOCATION
(DLOC VARCHAR (20),
DNO VARCHAR(20),
FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO)ON DELETE CASCADE,
PRIMARY KEY (DNO, DLOC));

CREATE TABLE PROJECT (
PNO INTEGER PRIMARY KEY,
PNAME VARCHAR(20),
PLOCATION VARCHAR (20),
DNO VARCHAR(20),
FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO)ON DELETE CASCADE);

CREATE TABLE WORKS_ON (
HOURS INT,
SSN VARCHAR(20),
PNO INT,
FOREIGN KEY (SSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE,
FOREIGN KEY (PNO) REFERENCES PROJECT(PNO)ON DELETE CASCADE,
PRIMARY KEY (SSN, PNO));

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSECE01','JOHN','SCOTT','BANGALORE','M', 450000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
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('RNSCSE01','JAMES','SMITH','BANGALORE','M', 500000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSCSE02','HEARN','BAKER','BANGALORE','M', 700000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSCSE03','EDWARD','SCOTT','MYSORE','M', 500000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSCSE04','PAVAN','HEGDE','MANGALORE','M', 650000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSCSE05','GIRISH','MALYA','MYSORE','M', 450000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSCSE06','NEHA','SN','BANGALORE','F', 800000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSACC01','AHANA','K','MANGALORE','F', 350000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSACC02','SANTHOSH','KUMAR','MANGALORE','M', 300000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSISE01','VEENA','M','MYSORE','M', 600000);
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES
('RNSIT01','NAGESH','HR','BANGALORE','M', 500000);

-- Correct date format for MySQL
INSERT INTO DEPARTMENT VALUES (1,'ACCOUNTS','2001-01-01','RNSACC02');
INSERT INTO DEPARTMENT VALUES (2,'IT','2016-08-01','RNSIT01');
INSERT INTO DEPARTMENT VALUES (3,'ECE','2008-06-01','RNSECE01');
INSERT INTO DEPARTMENT VALUES (4,'ISE','2015-08-01','RNSISE01');
INSERT INTO DEPARTMENT VALUES (5,'CSE','2002-06-01','RNSCSE05');

UPDATE EMPLOYEE SET
SUPERSSN = NULL, DNO = '3'
WHERE SSN = 'RNSECE01';

UPDATE EMPLOYEE SET
SUPERSSN = 'RNSCSE02', DNO = '5'
WHERE SSN = 'RNSCSE01';

UPDATE EMPLOYEE SET
SUPERSSN = 'RNSCSE03', DNO = '5'
WHERE SSN = 'RNSCSE02';

UPDATE EMPLOYEE SET
SUPERSSN = 'RNSCSE04', DNO = '5'
WHERE SSN = 'RNSCSE03';

UPDATE EMPLOYEE SET
DNO = '5', SUPERSSN = 'RNSCSE05'
WHERE SSN = 'RNSCSE04';

UPDATE EMPLOYEE SET
DNO = '5', SUPERSSN = 'RNSCSE06'
WHERE SSN = 'RNSCSE05';

UPDATE EMPLOYEE SET
DNO = '5', SUPERSSN = NULL
WHERE SSN = 'RNSCSE06';

UPDATE EMPLOYEE SET
DNO = '1', SUPERSSN = 'RNSACC02'
WHERE SSN = 'RNSACC01';

UPDATE EMPLOYEE SET
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DNO = '1', SUPERSSN = NULL
WHERE SSN = 'RNSACC02';

UPDATE EMPLOYEE SET
DNO = '4', SUPERSSN = NULL
WHERE SSN = 'RNSISE01';

UPDATE EMPLOYEE SET
DNO = '2', SUPERSSN = NULL
WHERE SSN = 'RNSIT01';

INSERT INTO DLOCATION VALUES ('BANGALORE', '1');
INSERT INTO DLOCATION VALUES ('BANGALORE', '2');
INSERT INTO DLOCATION VALUES ('BANGALORE', '3');
INSERT INTO DLOCATION VALUES ('MANGALORE', '4');
INSERT INTO DLOCATION VALUES ('MANGALORE', '5');

INSERT INTO PROJECT VALUES (100, 'IOT', 'BANGALORE', '5');
INSERT INTO PROJECT VALUES (101, 'CLOUD', 'BANGALORE', '5');
INSERT INTO PROJECT VALUES (102, 'BIGDATA', 'BANGALORE', '5');
INSERT INTO PROJECT VALUES (103, 'SENSORS', 'BANGALORE', '3');
INSERT INTO PROJECT VALUES (104, 'BANK MANAGEMENT', 'BANGALORE', '1');
INSERT INTO PROJECT VALUES (105, 'SALARY MANAGEMENT', 'BANGALORE', '1');
INSERT INTO PROJECT VALUES (106, 'OPENSTACK', 'BANGALORE', '4');
INSERT INTO PROJECT VALUES (107, 'SMARTCITY', 'BANGALORE', '2');

INSERT INTO WORKS_ON VALUES (4, 'RNSCSE01', 100);
INSERT INTO WORKS_ON VALUES (6, 'RNSCSE01', 101);
INSERT INTO WORKS_ON VALUES (8, 'RNSCSE01', 102);
INSERT INTO WORKS_ON VALUES (10, 'RNSCSE02', 100);
INSERT INTO WORKS_ON VALUES (3, 'RNSCSE04', 100);
INSERT INTO WORKS_ON VALUES (4, 'RNSCSE05', 101);
INSERT INTO WORKS_ON VALUES (5, 'RNSCSE06', 102);
INSERT INTO WORKS_ON VALUES (6, 'RNSCSE03', 102);
INSERT INTO WORKS_ON VALUES (7, 'RNSECE01', 103);
INSERT INTO WORKS_ON VALUES (5, 'RNSACC01', 104);
INSERT INTO WORKS_ON VALUES (6, 'RNSACC02', 105);
INSERT INTO WORKS_ON VALUES (4, 'RNSISE01', 106);
INSERT INTO WORKS_ON VALUES (10, 'RNSIT01', 107);

Q1:
(SELECT DISTINCT P.PNO
FROM PROJECT P, DEPARTMENT D, EMPLOYEE E
WHERE E.DNO=D.DNO
AND D.MGRSSN=E.SSN
AND E.LNAME='SCOTT')
UNION
(SELECT DISTINCT P1.PNO
FROM PROJECT P1, WORKS_ON W, EMPLOYEE E1
WHERE P1.PNO=W.PNO
AND E1.SSN=W.SSN
AND E1.LNAME='SCOTT');


Q2:
SELECT E.FNAME, E.LNAME, 1.1*E.SALARY AS INCR_SAL FROM
EMPLOYEE E, WORKS_ON W, PROJECT P
WHERE E.SSN=W.SSN
AND W.PNO=P.PNO
AND P.PNAME='IOT';
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Q3:
SELECT SUM(E.SALARY), MAX(E.SALARY), MIN(E.SALARY), AVG(E.SALARY)
FROM EMPLOYEE E, DEPARTMENT D
WHERE E.DNO=D.DNO
AND D.DNAME='ACCOUNTS';

Q4:
SELECT E.FNAME, E.LNAME
FROM EMPLOYEE E
WHERE NOT EXISTS (
   SELECT P.PNO
   FROM PROJECT P
   WHERE P.DNO = '5'
   AND P.PNO NOT IN (
      SELECT W.PNO
      FROM WORKS_ON W
      WHERE W.SSN = E.SSN
   )
);

Q5:
SELECT D.DNO, COUNT(*)
FROM DEPARTMENT D, EMPLOYEE E
WHERE D.DNO=E.DNO
AND E.SALARY>600000
AND D.DNO IN (SELECT E1.DNO
FROM EMPLOYEE E1 GROUP
BY E1.DNO HAVING COUNT(*)>5)
GROUP BY D.DNO;
```